

The Relationship Between Balanced Scorecard Characteristics and Managers' Job Satisfaction*

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A primary tenet of principal-agency theory is that firms must delegate decision-making to managers. However, the manager's actions are seldom directly observable by the firm. Therefore, firms develop performance measurement (PM) systems to not only evaluate performance, but to help align managerial actions with the goals of the firm. Traditionally, however, these systems have extensively relied on financial measures, which provide incentives for managers to make decisions that focus on short-run performance (Butler *et al.*, 1997; Kaplan and Norton, 1996). This short-run emphasis has been an ongoing concern in the management accounting literature (for example, Eldenburg and Wolcott, 2005). To help mitigate this short-term focus, Kaplan and Norton (KN) (1992, 1996) proposed an alternative PM system, the Balanced Scorecard (BSC).

Successful implementations of the BSC have been reported by management accounting practitioners (for example, Birchard, 1996; Lyons and Gumbus, 2004; Nankervis, 2006). Several preliminary empirical studies have addressed BSC issues. For example, Lipe and Salterio (2000) find that managers rely more on common (i.e., measures that are the same across different divisions) versus unique performance measures (i.e., measures distinctive to a particular division). Then, Libby, Salterio and Webb (2004) show that accountability mitigates this focus on common measures. Lipe and Salterio (2002) establish that the use of the BSC results in different evaluations of performance than when relying on alternative systems. Other studies have demonstrated that managers fail to understand the cause and effect relationships inherent in the BSC concept (i.e., Banker *et al.*, 2004; Malina and Selto, 2001). Burney and Matherly

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(2007) provide evidence that the comprehensiveness of the PM system is associated with employee outcomes through the availability of job-relevant information. Job-relevant information and role stress are found to mediate the relation between the extent to which the PM system is linked to organizational strategy and employee performance (Burney and Widener, 2007).

It is generally recognized that a primary goal of PM systems is to promote goal congruence and influence managers' behavior (Otley, 1999). Thus, understanding the impact that PM systems such as the BSC have on managers' action choices is integral to the development of systems that will effectively attain organizational goals. Given the importance of PM systems' influence on managers' behaviors, additional research about BSC issues is needed.

This study, based on survey data collected from accounting managers in BSC firms, focuses on the BSC's effect on an individual manager's job satisfaction and increases understanding of the BSC's effectiveness within firms. Specifically, this study extends the BSC research by investigating whether two BSC characteristics—the *perspective framework* and the *strategy link*—influence managers' behavior. First, results from this study show a strong, positive relation between job satisfaction and managers' perceptions of the strength of the linkage between performance measures and organizational strategy. Perhaps managers who use a BSC that establishes a strong connection with strategy are better informed about the actions desired by the organization and thus face less ambiguity at work. As a result, the managers would experience higher levels of job satisfaction. Second, this study finds that the inclusion of non-financial measures in some BSC categories is positively related to managers' job satisfaction and, therefore, may encourage a long-term decision-making focus. Another contribution of this study is the development of a decision rule to be used when applying survey methodology that allows the researcher to identify organizations that use a BSC.

The next section describes the BSC characteristics in this study and reviews the relevant literature. Then, job satisfaction is described and the formal hypotheses are presented. The following sections describe the research method, report the results and conclusions, and discuss the study's limitations and directions for future research.

BSC CHARACTERISTICS

Kaplan and Norton (1992, 1996) promote the BSC as a PM system that differs from traditional systems. This study tests two of the BSC's unique characteristics – *perspective framework* and *strategy link* – which could influence managerial behavior.

Perspective Framework

The PM systems employed by many firms incorporate a combination of both financial and non-financial measures (Brancato, 1995; Bryant *et al.*, 2004; Epstein and Manzoni, 1997; Stivers *et al.*, 1998). Yet, most organizations continue to place most, if not all, of the emphasis in their performance evaluations on financial outcomes.¹ However, the

¹The purpose of this paper is to determine whether the inclusion of measures other than the traditional financial outcomes impact employee behaviors. Given that all firms include financial measures in their PM systems and that the differentiating characteristic is the inclusion of the other non-financial categories, the financial category is not included in hypotheses testing. However, as noted in the Table 3 results, the analysis is rerun including the financial category. The conclusions from the analyses are unchanged.

BSC categorizes these measures into three perspectives beyond the traditional financial focus: customer, internal business process, and learning and growth (Maiga and Jacobs, 2003). This *perspective framework* encourages a holistic view of the firm by including the perspectives that are integral to the achievement of organizational objectives (Burney and Matherly, 2007; KN, 1996). In this way, no one perspective dominates. Through this framework, the BSC focuses managers on the firm's desired outcomes (Epstein and Manzoni, 1997) and communicates a balanced, holistic view to managers. Within the BSC framework, the performance measures consist of a mix of leading and lagging indicators of performance (Albright and Lam, 2006). Leading indicators help project future financial performance and includes measures such as employee satisfaction and customer satisfaction. High customer satisfaction ratings should lead to improved future financial outcomes as customers return to purchase once again from the company. Alternatively, lagging indicators report the results of past financial performance and include measures such as earnings per share and return on capital employed. By including leading indicators, managers should reduce their over-emphasis on short-term value creation.

Research suggests that superiors who rely on performance measures organized using the *perspective framework* make different performance evaluation judgments than when making decisions without this organization (Lipe and Salterio, 2002). In studies examining the effect on firm performance, Hoque and James (2000) find a positive relation for the use of measures across the BSC perspectives. Hall (2008) provides support for the hypotheses that role clarity and psychological empowerment mediate the relation between the use of comprehensive PM systems and managers' job performance. However, no research directly addresses whether subordinate managers' job satisfaction is affected by the *perspective framework*.

Strategy Link

A primary objective of any PM system is to motivate managers to make decisions consistent with the overall strategy of the firm (KN, 1996). Establishing a link between a firm's strategy and its performance measures differentiates the BSC from traditional systems and is the second characteristic of interest in this current study (KN, 1996). This *strategy link* reflects the hypothesized cause-and-effect relations, which evolve from the firm's clearly defined strategy. When performance measures are chosen in this way, the goals that managers are encouraged to pursue are aligned with the firm's goals (KN, 1996, 2008). In addition, the BSC's communication of strategy enables managers to understand how outcome measures are affected by their actions (Atkinson, 2006; Burney and Widener, 2007; Kaplan and Atkinson, 1998; Maiga and Jacobs, 2003). Thus, managers are encouraged to pursue the holistic goals of the firm rather than making decisions based on individual or departmental goals (KN, 1996).

Research on the *strategy link* indicates that most BSC firms are selecting diverse combinations of measures for their PM systems (Sandhu *et al.*, 2008; Towers Perrin, 1996). This customization corresponds to the contribution that each of the different individual measures makes to the firm's overall strategy. Employees in BSC firms also have a better understanding of the firm's goals than they had under traditional PM systems (Ittner and Larcker, 1998; Towers Perrin, 1996). Higher linkages are reported by BSC users between performance measures and critical success factors, than by non-BSC users (Frigo and Krumwiede, 1999). Finally, when measures that managers perceive to

be important or helpful are included in the performance evaluation, they report changes in their actions (Malina and Selto, 2001; Van der Stede *et al.*, 2006). Extant research studies, however, do not address the impact of the *strategy link* on the job satisfaction of subordinate managers.

MANAGERS' JOB SATISFACTION AND HYPOTHESES

The BSC was developed by KN (1996) as a mechanism to provide managers with feedback concerning the impact of their actions. As such, the BSC should enable managers to engage in activities that are consistent with firm goals, ultimately improving the manager's decision-making process (Lipe and Salterio, 2002) and the firm's long-run performance (KN, 1996, 2008). To investigate the BSC's effect on the manager, this study examines the association between each BSC characteristic – the *perspective framework* and the *strategy link* – and managers' job satisfaction.

Managers' Job Satisfaction

Job satisfaction is a critical variable for understanding overall organizational effectiveness (Rusbult *et al.*, 1988). Basically, job satisfaction reflects how an individual feels about his/her job. Prior research supports a positive relation between job satisfaction and organizational revenues (Banker *et al.*, 2000). However, low job satisfaction is associated with higher turnover intentions (Pasewark and Strawser, 1996; Snead and Harrell, 1991), increased job insecurity (Ameen *et al.*, 1995), and higher levels of absenteeism and employee dissent (Staw, 1984). Given the investment that firms make in hiring and training their employees, job dissatisfaction and turnover are costly.

Prior literature provides a framework detailing the impact that task characteristics have on job outcomes, such as job satisfaction (Spector, 1997). Hackman and Oldham's model details five core job dimensions, including feedback (Robbins, 2003). In this model, feedback is defined as the "degree to which carrying out the work activities required by the job results in the individual obtaining direct and clear information about the effectiveness of his or her performance" (Robbins, 2003: 465). The extensive research investigating the model's relationships has consistently shown that feedback has a positive impact on job satisfaction.

Through its purported communication of strategy, the BSC is expected to impact job satisfaction in two ways. First, this communication should help managers understand the behaviors desired by the firm. Possession of role information increases an individual's understanding of his or her work role (Viator, 2001). Prior research consistently finds that clarifying job expectations through this role information leads to higher levels of job satisfaction (Ameen *et al.*, 1995; Jackson and Schuler, 1985; Sawyer, 1992; Van Sell *et al.*, 1981). Second, the presence of organizational constraints, such as not having enough information to perform a job well, is negatively related to employee satisfaction (Penney and Spector, 2005; Spector, 1997). Research examining the availability of job-relevant information suggests that having access to information relevant to the work task enhances the effectiveness of the employee's task completion (Lau and Tan, 2003). Continuing with this reasoning, Lau and Tan (2003) find support for their contention that the feelings of success that result from this information availability are related to higher levels of job satisfaction.

In light of these prior findings, the BSC's provision of feedback would be expected

to affect managers' satisfaction with work. To examine these contentions, this study investigates the BSC's effectiveness by examining whether each BSC characteristic is positively associated with managers' job satisfaction. The formal hypotheses for managers' job satisfaction are:

- H1A: The relation between managers' emphasis on customer measures and managers' job satisfaction is positive.
- H1B: The relation between managers' emphasis on internal business process measures and managers' job satisfaction is positive.
- H1C: The relation between managers' emphasis on learning and growth measures and managers' job satisfaction is positive.
- H2: The relation between the strength of the strategy link and managers' job satisfaction is positive.

RESEARCH METHOD

This study used a survey to collect data because of three advantages this method provides. First, a survey allowed information to be collected directly from individuals who are actively using a BSC, enhancing the external validity of the results (Brownell, 1995). Second, surveys are a cost-effective means of obtaining large amounts of cross-sectional information (Krumwiede, 1998). Finally, surveys also permit respondents to retain their anonymity, which allows respondents to be more candid in their responses than if they are identified (Brownell, 1995).

The first survey request was mailed to 1,524 managers (based on their reported job title), who were included in a random sample of Institute of Management Accountants (IMA) members. After about four weeks, a second survey was sent to 828 individuals who had not responded with a reply card from the first mailing.

The survey was returned by 763 accounting managers, resulting in a response rate of 50.07 percent. The potential for non-response bias was tested by comparing early and late respondents using: (1) Chi-square tests based on gender and industry, and (2) independent samples *t*-tests for differences between the means of the study variables. The results of these tests support the assumption that a systematic bias due to non-response is unlikely.

Surveys were mailed to all 1,524 managers without prior knowledge of whether their firm uses a BSC. Therefore, both users and non-users are included in the total responding sample. Since this study focuses on BSC firms, non-users were eliminated using *ex ante* criteria designed to identify a BSC firm.

Data Set Decision Rule

Malmi (2001) details the criteria for a measurement system to be a BSC as: (1) containing financial and non-financial measures derived from the original four perspectives (not necessarily the exact four specified by KN) and (2) reflecting the firm's strategy. In line with these descriptions, the decision rule used to reduce the sample applies two criteria. First, the decision rule includes respondents who indicate that they

use information from financial and non-financial measures to make decisions. The survey asks respondents to report (using a seven-point scale where 1 = “used very little” to 7 = “used a great deal”) how much emphasis they put on information from each of the following performance measure categories during decision-making:

Breakdown of Performance Measure Categories by Perspective

Financial Perspective

Financial outcomes

Customer Perspective

Customer outcomes

Internal Business Process Perspective

Product/service quality outcomes

Operational performance outcomes

Innovation in processes

Learning and Growth Perspective

Employee outcomes

Information systems capabilities outcomes

Organizational procedures outcomes

For each BSC perspective, an average response is calculated per respondent. Many non-BSC firms already use both financial and non-financial performance measures, such as those found in the financial and customer perspectives of the BSC (KN, 1996). In addition, the BSC's four perspectives, which serve as a template, may not be used by all managers (KN, 1996). Therefore, the decision rule in this study retains only those respondents with an average rating of five or higher for three of the four BSC perspectives.² While the choice of a cut-off is arbitrary, the assumption that BSC users will report a level above the mid-point of the seven-point scale is reasonable.

The second part of the decision rule focuses on the strategy. The initial step in developing a BSC is the translation of firm strategy into very specific goals and measures (KN, 1996, 2008). In this study, survey respondents report the extent that their firm's PM system includes measures that reflect organizational strategy. A decision rule is applied that retains only those responses of five or greater in the data set, resulting in a usable sample of 253 respondents.³ Cohen and Cohen (1983) suggest that a sample size of approximately 200 is needed to achieve power of 0.80 at a significance level of 0.05. Therefore, the sample size appears sufficient.

²This study's hypotheses were also tested using four and above as the cutoff. No change was noted in the significance of the hypotheses when using this alternative data set.

³As a validity check, the survey also asks the respondent whether his or her firm uses a BSC. All 192 respondents who answered “yes” to that question met the decision rule criteria and are therefore included in the final sample. However, asking about BSC usage often leads to classification errors as some respondents may not be well-informed about what differentiates a BSC from other PM systems. As noted by Ittner and Larcker (2003), managers within organizations often implement a BSC as a result of a directive from upper management. Then, the measures are placed into the BSC perspective “boilerplate” framework without the establishment of a causal relationship to strategy (Ittner and Larcker, 2003). These systems are not truly BSCs. Therefore, this study does not rely on a direct question of BSC usage, but rather uses a decision rule to identify BSC users.

The surveys were distributed to IMA members with a job title of manager or above. Thus, sample job titles of the respondents' include Chief Financial Officer, Controller, Vice President, and Corporate Treasurer. The respondents in the sample were mostly male (76%) and between the ages of 35 and 44 (41%) or 45 and 54 (35%). On average, the respondents had been employed by their current organization for approximately 11 years and had held a manager position for 13.5 years. Most respondents of the sample were employed in the manufacturing industry (35%) or the finance, insurance and real estate industry (24%).

Measurement of Variables

For this study, scales were developed to measure the BSC characteristics. However, an established scale was used to assess managers' job satisfaction. The theoretical constructs in this study were estimated using summed-item scales. These scales were evaluated for unidimensionality and reliability. Unidimensionality is demonstrated by a single factor solution identified during a factor analysis. The guideline for an item to be included in this final factor solution is a loading of 0.50 or greater (Nunnally, 1978). Cronbach's alpha is the most often used tool for assessing reliability (Pedhazur and Schmelkin, 1991). A guideline of 0.70 or higher is generally required to demonstrate sufficient reliability (Nunnally, 1978). The scales used in this study met these criteria of unidimensionality and reliability (see Table 1 and the Appendix).

BSC Characteristics (Independent Variables)

The *perspective framework* constructs consist of items that represent PM categories that were evaluated on two different aspects. First, each category was rated (from 1 = "not very important" to 7 = "very important") on its importance to managers for decision-making. Second, managers indicated for each category the extent they use it when making decisions (where 1 = "used very little" and 7 = "used a great deal"). Variables resulting from the scale assessment were used to represent the three non-financial BSC perspectives. The items making up each of these scales, along with the related factor loadings, are reported in the Appendix.

The eleven *strategy link* items, as shown in the Appendix, focus on four areas. The first area is an assessment of the strength of the linkage between performance measures and strategy. The second area reflects whether the respondents perceive that their PM system communicates firm strategy. In the third area, managers evaluate whether the performance measures help them comprehend the consequences of their decisions and actions. The last area includes items regarding whether the PM system includes measures that encourage innovative activities.

Managers' Job Satisfaction (Dependent Variable)

Job Satisfaction. Prior research has developed many measures to capture satisfaction with various aspects of the individual's job. This research shows that individuals react differently to the various facets of job satisfaction (Spector, 1997). Therefore, this study uses the Job Description Index's work facet as measured using five questions (see the Appendix) (Smith *et al.*, 1969), which were modified by Gregson (1990). Respondents were asked to indicate, using a seven-point scale from 1 (strongly disagree) to 7

(strongly agree), their level of agreement that each statement (such as satisfying, boring, challenging) actually describes their work. Higher scores represent greater levels of job satisfaction.

This scale is chosen for three reasons. First, the scale is one of the “most carefully developed and validated” measures of job satisfaction (Spector, 1997: 12). Second, the scale considers multiple items when assessing job satisfaction. Third, the measure has been used in prior studies involving accountants (Ameen *et al.*, 1995; Gregson, 1990; Pasewark and Strawser, 1996).

Descriptive Statistics

Table 1 presents descriptive statistics for the study’s scales. For each scale, the means are above the mid-point of four, with most of the individual scale scores falling between five and seven.

Table 1
Descriptive Statistics and Cronbach’s Alpha
Managers’ Job Satisfaction and BSC Characteristic Scales

Variable	No. Items	Mean (Std Dev)	Range	Cronbach’s Alpha
Job Satisfaction	5	5.99 (0.80)	2.00 to 7.00	0.89
Customer Measures	2	6.16 (0.87)	1.00 to 7.00	0.84
Internal Business Process Measures	3	5.41 (0.81)	2.67 to 7.00	0.73
Learning and Growth Measures	2	5.38 (0.97)	2.50 to 7.00	0.77
Strategy Link	11	5.17 (0.77)	2.91 to 7.00	0.92

Table 2 reports the correlation coefficients. Significant correlations were found between many of the variables. The significant correlations between the various perspectives would be reasonable since the perspectives are combined to encourage a holistic view of the firm. However, multicollinearity is a concern due to the presence of these significant correlations. To address this issue, variance inflation factors (VIFs) were calculated. Since none of the VIFs are greater than the guideline of 10 (Dielman, 1996), multicollinearity was not considered an issue in this study.

Table 2
Pearson Correlation Coefficients and P-Values for
Managers’ Job Satisfaction and BSC Characteristic Scales

	JS	PF ₁	PF ₂	PF ₃
JS	1.0000			
PF ₁ Customer	0.155 0.008	1.0000		
PF ₂ Internal Business Process	0.149 0.011	0.129 0.029	1.0000	
PF ₃ Learning and Growth	0.227 0.000	0.250 0.000	0.354 0.000	1.0000
SL	0.380 0.000	0.011 0.851	0.376 0.000	0.309 0.000

Bolded values indicate *p*-values less than or equal to 0.05.
Note: JS = job satisfaction; PF₁ = managers’ emphasis on customer measures during decision-making; PF₂ = managers’ emphasis on internal business process measures during decision-making; PF₃ = managers’ emphasis on learning and growth measures during decision-making; and SL = strategy link.

RESULTS

The study’s hypothesized relations were tested using multiple regression. Hypotheses H1 and H2 predict significant relationships between managers’ job satisfaction and each of the BSC characteristics. The following equation was used to estimate these effects:

$$JS = \beta_0 + \beta_1 PF_1 + \beta_2 PF_2 + \beta_3 PF_3 + \beta_4 SL + \mu$$

where

- JS = job satisfaction
- PF₁ = managers’ emphasis on customer measures during decision-making
- PF₂ = managers’ emphasis on internal business process measures during decision-making
- PF₃ = managers’ emphasis on learning and growth measures during decision-making
- SL = strategy link
- μ = disturbance term

The regression results are shown in Table 3. A positive and significant relationship (*p*-value = 0.0001) exists between the Strategy Link (H2) and managers’ job satisfaction. Managers who perceived a stronger linkage between the organization’s strategy and the measures within the BSC also report higher levels of job satisfaction. The relation of job satisfaction with the Emphasis on Customer Measures (H1A) is positive and significant

(p -value = 0.0065), as is the Emphasis on Learning and Growth Measures (H1C) (p -value = 0.0247). Respondents who report more emphasis on the customer and learning and growth measures in their decision-making also have higher job satisfaction. These results provide support for hypotheses H2 (Strategy Link), H1A (Emphasis on Customer Measures), and H1C (Emphasis on Learning and Growth Measures). Managers' job satisfaction is positively related to these BSC characteristics. However, the Emphasis on Internal Business Process Measures (H1B) did not have a significant relation with job satisfaction.

Table 3
Job Satisfaction Regression Results

Independent Variables		(Beta Coefficients, t -statistics and p -values)	
PF ₁	Customer Measures	H1A	B = 0.1506 $t = 2.75$ $p = 0.0065$
PF ₂	Internal Business Process Measures	H1B	B = -0.0936 $t = -1.49$ $p = 0.1380$
PF ₃	Learning and Growth Measures	H1C	B = 0.1200 $t = 2.26$ $p = 0.0247$
SL	Strategy Link	H2	B = 0.3559 $t = 5.42$ $p = 0.0001$
Model Adjusted R ²		0.1802	
Model F (p -value)		14.57 (0.0001)	

Bolded values indicate p -values that are less than or equal to 0.05.

The financial perspective is also included in both regressions. There are no differences regarding which of the hypotheses are supported.

Note: JS = job satisfaction; PF₁ = managers' emphasis on customer measures during decision-making; PF₂ = managers' emphasis on internal business process measures during decision-making; PF₃ = managers' emphasis on learning and growth measures during decision-making; and SL = strategy link.

DISCUSSION

The BSC concept is the focus of a growing stream of management accounting research. The purpose of this study is to build on this research by investigating two of the BSC's major characteristics and their impacts on managers' job satisfaction.

First, the link between performance measures and organizational strategy is a characteristic unique to the BSC. This *strategy link* communicates to managers the firm's strategy and objectives. In this study, results related to this *strategy link* characteristic produced the most significant results. In particular, the results demonstrate higher levels of job satisfaction when managers also report stronger *strategy links*. An understanding

of organizational strategy should enable managers to make decisions that are consistent with the goals of the firm (KN, 1996; Malina *et al.*, 2007). Such goal congruence leads to higher job satisfaction as the agreement on goals results in an exchange relationship that is perceived as more supportive and provides more positive reinforcement for work behaviors (Yukl and Fu, 1999). This study contributes to the BSC literature by supplying evidence suggesting that establishing the *strategy link* may enable managers to align their actions with organizational objectives.

Second, another unique characteristic of the BSC is the inclusion of both leading and lagging performance measures. Leading indicators are generally long-term non-financial measures, while lagging indicators are generally short-term financial measures. This study's findings suggest that a greater emphasis on making decisions based on certain leading (long-term) measures is associated with greater job satisfaction, as shown by the Emphasis on Customer Measures (H1A) and Emphasis on Learning and Growth Measures (H1C). This result is consistent with the contention that owners' desires for long-run financial success may create conflict for managers when short-term financial results are the focus of managerial performance evaluations. Thus, inclusion of these leading measures helps alleviate this conflict. This study also contributes to the BSC literature by suggesting that a long-term emphasis in the PM systems may motivate managers to make decisions that create long-term value, thereby helping to mitigate managers' short-term focus.

Another purpose of this study was to develop a method of classification for a firm as a BSC user through survey responses. The decision rule is grounded in the BSC theory, yet employs a straightforward approach. This initial attempt to define such a rule provides a reasonable, well-structured approach for further investigation.

Limitations and Directions for Future Research

Survey methodology provides many advantages in examining this topic; however, this methodology also has several inherent limitations. One limitation is that only two BSC characteristics are included in this study. The BSC has other unique characteristics which, if included in this model, might shed a different light on the relationships studied. These additional unique characteristics of the BSC include an emphasis on innovation and a double-loop learning process. Another limitation is the use of a cross-sectional, convenient sample that may not represent the entire population. As such, survey results may not be generalizable across populations. Finally, even though a high response rate was obtained and the data was tested for non-response bias, the potential impact of non-respondents cannot be determined.

Future research could address some of this study's limitations discussed above, such as examining additional BSC characteristics to obtain a more complete understanding of its effectiveness within firms. In addition, facilitation of future BSC research requires that decision rules are developed which classify BSC usage. Better defined classification methods than the initial attempt introduced in this article may more clearly reflect current BSC usage and also lead to greater insights concerning the effectiveness of the BSC. Research examining the potential difference in the perceptions between management levels might also provide useful insight for understanding BSC effectiveness. Also, given the focus in the stock market on current financial performance, future research could examine the effect that this focus has on reliance on non-financial BSC perspectives.

Appendix Scale Factor Loadings

Survey Item No	Item	Factor Loads
Job Satisfaction Scale^a		
My work... (1 = strongly disagree and 7 = strongly agree)		
E1	...is satisfying.	0.88
E2	...is boring. (reverse-scored)	0.74
E3	...is good.	0.65
E4	...is tiresome. (reverse-scored) ^b	XX
E5	...is challenging.	0.80
E6	...gives me a sense of accomplishment.	0.89
Customer Measures Scale^c		
Indicate how important the category is to your decision-making in the organization.		
A2	Customer outcomes	0.79
A3	Product/service quality	0.79
Internal Business Process Measures Scale		
Indicate how important the category is to your decision-making in the organization.		
A5	Innovation in processes	0.55
Indicate the extent to which you use information in the category to make decisions about your organization's business unit.		
G4	Operational performance	0.70
G5	Innovation in processes	0.57

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^bIn the initial factor analysis, Item E4 has a factor loading of 0.21, which does not meet the criteria for unidimensionality. Therefore, Item E4 is not included in the scale for further analysis.

^cThe Customer Measures Scale originally included items addressing the "use" of information from these categories. However, the items did not load as one scale in the factor analysis.

Appendix (continued)
Scale Factor Loadings

Survey Item No	Item	Factor Loads
Learning and Growth Measures Scale^d		
Indicate how important the category is to your decision-making in the organization.		
A6	Employee outcomes (satisfaction, skills, etc.)	0.71
Indicate the extent to which you use information in the category to make decisions about your organization's business unit.		
G6	Employee outcomes	0.71
Strategy Link Scale		
My organization's performance measurement system... (1 = strongly disagree and 7 = strongly agree)		
D1	...uses measures chosen because they relate to organizational strategy.	0.69
D3	...helps me to understand how my organization's strategy is to be achieved.	0.81
D4	...encourages me to develop new processes.	0.64
D6	...helps me to understand the financial consequences of my decisions and actions.	0.72
D8	...explains cause-and-effect relationships between my actions and my unit's performance measurement outcomes.	0.72
D10	...helps me to understand trade-offs that I encounter among performance measures when I am making decisions.	0.75
D11	...helps me to understand my role in achieving organizational objectives.	0.81
D12	...includes measures of innovative activities that influence my decision-making.	0.67
D15	...helps me to understand the relationships among all of the key measures.	0.75
D20	...uses performance measures chosen to fit my organization's strategy (versus using a set of generic measures).	0.66
F1	I know my organization's strategy.	0.58

^dThe Learning and Growth Scale originally included items addressing information systems capabilities. However, during factor analysis these items did not load with the Employee Outcomes items to form one scale.

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